

REMARKS

The Office Action mailed May 10, 2011, has been received and its contents carefully noted. Claims 1, 3, 5, 7, 9 and 14 were pending. Claims 1, 3, 5, 7, 9 and 14 were rejected.

Claim 1 has been amended to emphasize the nanoscale property of the zinc oxide. Support for the term is found throughout the specification as originally filed, in particular, the examples. No statutory new matter has been added. Therefore, reconsideration and entry of the claims, as amended, are respectfully requested.

Applicants again note with appreciation the indication that the subject matter of claim 11 is indicated to be allowable. Applicants reserve the right to place the claim in independent form.

Rejection under 35 U.S.C. § 103(a)

Claims 1, 3, 5, 7, 9 and 12-14 are newly rejected under 35 U.S.C. 103(a) as being unpatentable over Kerner et al. (US 20020168524) in view of Mitchnick et al. (US 5,486,631), Korth et al. (US 7,186,768) and Katustic (US 7,718,261). Applicants respectfully traverse.

The Examiner has assembled various references which dealt with metal oxides or silanization. Potential sunscreen utility for zinc oxide is mentioned in the Korth et al. and Mitchnick et al. patents. The issue here is the design of an improved active zinc oxide ingredient for sunscreen use. Improved SPF values are demonstrated for formulations containing the claimed zinc oxide active ingredient.

Of the art assembled by the Examiner, presumably in light of applicants' specification, the Katusic et al. and Mitchnick et al. patents appear the most relevant. Neither teaches, however, the invention or the improved zinc oxide ingredient. The SPF values, disclosed, show benefits for the active zinc oxide active ingredient. Even if one views the claimed nanoscale zinc oxide ingredient as an intermediate and the formulation as the final product, some weight should

be given to the intermediate when considering the unexpected SPF values shown for the exemplified formulations. Kerner et al. is directed to pyrogenically prepared doped metal oxides. Dopants are mentioned in terms of their effect on agglomerate and aggregated structure of pyrogenically prepared metal oxides. Such doped products are not claimed. While Korth et al. mention "shape factors", it is in the context of silane modified siliceous or oxidic fillers and their use in rubber applications. The relevance to sunscreen formulations is not apparent from Korth et al. (even considering the teachings of the other applied references).

Claim 1 describes a surface-modified nanoscale pyrogenically produced zinc oxide powder characterized as comprising aggregates and as having the following physico-chemical characteristics: BET surface areas: $18 \pm 5 \text{ m}^2/\text{g}$; C content: 0.5 to 1.0 wt.%; average diameter: 50 to 300 nm and a shape factor F (circle) of below 0.5, where the surface modification is specified as silanization through the use of specified agents.

While Katusic et al. show a nanoscale zinc oxide product similar to that claimed (note figure 1), it does not show one with the specific claimed BET value, one that is surface modified or one prepared in a manner so that it has the claimed shape factor F value. It is not clear from the reference why such a product would be selected from the range of products taught.

Further, while Mitchnick et al. do teach a hydrophobic zinc oxide product, there is no teaching provided that would aid and motivate one of ordinary skill to have selected a nanoscale zinc oxide product having the specific BET value and shape factor F value claimed. Some weight should be given to the unexpected results shown for the exemplified sunscreen formulation.

Reconsideration is respectfully requested.

Request for Interview

A telephonic or an in-person interview is respectfully requested should there be any remaining issues.

CONCLUSION

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Therefore, it is respectfully requested that the Examiner reconsider the presently outstanding rejection and that it be withdrawn. It is believed that a full and complete response has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

It is not believed that extensions of time are required, beyond those that may otherwise be provided for in accompanying documents. However, in the event that additional extensions of time are necessary to prevent abandonment of this application, then such extensions of time are hereby petitioned under 37 C.F.R. 1.136(a), and any fees required therefor are hereby authorized to be charged to **Deposit Account No. 02-4300, Attorney Docket No. 032301.443.**

Respectfully submitted,
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